

[If adopted, this would be a new regulation]

[Approved by the Committee of the Whole on January 13, 2005, for Public Review]

[Changes to Draft #2 (the proposed regulation) are redlined and double underlined]**REGULATION 5.23 Categories of Toxic Air Contaminants****Air Pollution Control District of Jefferson County****Jefferson County, Kentucky****Relates To:** KRS Chapter 77 Air Pollution Control**Pursuant To:** KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation identifies the categories of toxic air contaminants to be addressed in these regulations.

SECTION 1 Category 1 Toxic Air Contaminants

1.1 The *Category 1 Toxic Air Contaminants* list includes the compounds monitored in the 2000 to 2001 *West Louisville Air Toxics Study* at a concentration representative of a cancer risk greater than 1.0×10^{-6} or a non-cancer Hazard Quotient (HQ) greater than 1.0.

1.2 The *Category 1 Toxic Air Contaminants* list reads as follows:

Category 1 Toxic Air Contaminants

CAS No.	Compound
1. 107-13-1	Acrylonitrile
2. 7440-38-2	Arsenic
& various	and arsenic compounds
3. 71-43-2	Benzene
4. 75-25-2	Bromoform
5. 106-99-0	1,3-Butadiene
6. 7440-43-9	Cadmium
& various	and cadmium compounds
7. 56-23-5	Carbon tetrachloride
8. 67-66-3	Chloroform
9. 126-99-8	Chloroprene [2-Chloro-1,3-butadiene]
10. 7440-47-3	Chromium
& various	and chromium compounds
11. 106-46-7	1,4-Dichlorobenzene
12. 140-88-5	Ethyl acrylate
13. 50-00-0	Formaldehyde
14. 75-09-2	Methylene chloride [Dichloromethane]
15. 7440-02-0	Nickel
& various	and nickel compounds
16. 127-18-4	Perchloroethylene [Tetrachloroethylene]
17. 79-01-6	Trichloroethylene
18. 75-01-4	Vinyl chloride

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Category 1 Toxic Air Contaminants notes:

For all listings above that contain the word "compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., arsenic, cadmium, chromium, and nickel) as part of that chemical's infrastructure.

SECTION 2 Category 2 Toxic Air Contaminants

2.1 The *Category 2 Toxic Air Contaminants* list includes the compounds with 2002 Toxics Release Inventory (TRI) reported air emissions for Jefferson County, Kentucky, with an EPA Risk-Screening Environmental Indicators (RSEI) Full Model Relative Risk Score equal to or greater than 500 that are not included in *Category 1 Toxic Air Contaminants*.

2.2 The *Category 2 Toxic Air Contaminants* list reads as follows:

Category 2 Toxic Air Contaminants

CAS No.	Compound
1. 7429-90-5	Aluminum (fume or dust)
2. 7664-41-7	Ammonia
3. 7637-07-2	Boron trifluoride
4. 141-32-2	Butyl acrylate
5. 7782-50-5	Chlorine
6. 7440-48-4	Cobalt
& various	and cobalt compounds
7. 7440-50-8	Copper
& various	and copper compounds
8. Various	Diisocyanates ¹
9. Various	Glycol ethers ²
10. 7647-01-0	Hydrochloric acid [Hydrogen chloride]
11. 7664-39-3	Hydrofluoric acid [Hydrogen fluoride]
12. Various	Lead compounds
13. 7439-96-5	Manganese
& various	and manganese compounds
14. 91-20-3	Naphthalene
15. 7697-37-2	Nitric acid
16. 7664-93-9	Sulfuric acid
17. 108-88-3	Toluene
18. 95-63-6	1,2,4-Trimethylbenzene
19. 1330-20-7	Xylene (mixed isomers)
** 95-47-6	o-Xylene
** 108-38-3	m-Xylene
** 106-42-3	p-Xylene

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Category 2 Toxic Air Contaminants notes:

** The specific isomer is included in the “mixed isomers” listing.

For all listings above that contain the word "compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., cobalt, copper, lead, and manganese) as part of that chemical's infrastructure.

¹ Diisocyanates include the specific chemicals listed in the 2003 Reporting Year List of TRI Chemicals, available on the Internet at “<http://www.epa.gov/tri/chemical/RY2003ChemicalList.pdf>”.

² Includes mono- and di-ethers of ethylene glycol, diethylene glycol, and triethylene glycol



where:

n = 1, 2, or 3;

R = alkyl C7 or less, or

R = phenyl or alkyl substituted phenyl; and

R' = H or alkyl C7 or less, or

OR' consisting of carboxylic acid ester, sulfate, phosphate, nitrate, or sulfonate, but excludes ethylene glycol monobutyle ether (EGBE, CAS No. 111-76-2).

SECTION 3 Category 3 Toxic Air Contaminants

3.1 The *Category 3 Toxic Air Contaminants* list includes the compounds identified by the EPA pursuant to Section 112(k) of the Clean Air Act as presenting significant risks to public health in urban areas that are not included in *Category 1 Toxic Air Contaminants* or *Category 2 Toxic Air Contaminants*.

3.2 The *Category 3 Toxic Air Contaminants* list reads as follows:

Category 3 Toxic Air Contaminants

<u>CAS No.</u>	<u>Compound</u>
1. 75-07-0	Acetaldehyde
2. 107-02-8	Acrolein
3. 7440-41-7	Beryllium
& various	and beryllium compounds
4. None	Coke oven emissions
5. 542-75-6	1,3-Dichloropropene
6. None	Diesel particulate matter
7. 106-93-4	Ethylene dibromide [1,2-Dibromoethane]
8. 107-06-2	Ethylene dichloride [1,2-Dichloroethane]
9. 75-21-8	Ethylene oxide
10. 118-74-1	Hexachlorobenzene
11. 302-01-2	Hydrazine

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Category 3 Toxic Air Contaminants (Con't)

CAS No.	Compound
12. 7439-97-6	Mercury
& various	and mercury compounds
13. 1336-36-3	Polychlorinated biphenyls [PCBs]
14. 50-32-8	Polycyclic organic matter ¹ [POM] (Benzo[a]pyrene)
& various	(also represented as 7-PAH)
15. 78-87-5	Propylene dichloride [1,2-Dichloropropane]
16. 91-22-5	Quinoline
17. 79-34-5	1, 1, 2, 2-Tetrachloroethane

Category 3 Toxic Air Contaminants notes:

For all listings above that contain the word "compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., beryllium and mercury) as part of that chemical's infrastructure.

¹ Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100°C. The seven polycyclic aromatic hydrocarbon (7-PAH) compounds are Benz[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[a]pyrene, Chrysene, Dibenz[a,h]anthracene, and Indeno[1,2,3-cd]pyrene.

SECTION 4 Category 4 Toxic Air Contaminants

4.1 The *Category 4 Toxic Air Contaminants* list includes the Hazardous Air Pollutants (HAPs) listed by the EPA pursuant to Section 112(b) of the Clean Air Act that are not included in *Category 1 Toxic Air Contaminants*, *Category 2 Toxic Air Contaminants*, or *Category 3 Toxic Air Contaminants*.

4.2 The *Category 4 Toxic Air Contaminants* list reads as follows:

Category 4 Toxic Air Contaminants

CAS No.	Compound
1. 60-35-5	Acetamide
2. 75-05-8	Acetonitrile
3. 98-86-2	Acetophenone
4. 53-96-3	2-Acetylaminofluorene
5. 79-06-1	Acrylamide
6. 79-10-7	Acrylic acid
7. 107-05-1	Allyl chloride
8. 92-67-1	4-Aminobiphenyl
9. 62-53-3	Aniline

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Category 4 Toxic Air Contaminants (Con't)

	CAS No.	Compound
154		
155		
156	10. 90-04-0	o-Anisidine
157	11. 7440-36-0	Antimony
158	& various	and antimony compounds
159	12. 1332-21-4	Asbestos
160	13. 151-56-4	Aziridine [Ethyleneimine]
161	14. 114-26-1	Baygon [Propoxur]
162	15. 92-87-5	Benzidine
163	16. 106-51-4	p-Benzoquinone [Quinone]
164	17. 98-07-7	Benzotrichloride
165	18. 100-44-7	Benzyl chloride
166	19. 92-52-4	Biphenyl
167	20. 117-81-7	Bis (2-ethylhexyl) phthalate [DEHP]
168	21. 111-44-4	Bis (2-chloroethyl) ether [Dichloroethylether]
169	22. 542-88-1	Bis (chloromethyl) ether
170	23. 74-83-9	Bromomethane [Methyl bromide]
171	24. 78-93-3	2-Butanone [Methyl ethyl ketone] [MEK]
172	25. 156-62-7	Calcium cyanamide
173	26. 133-06-2	Captan
174	27. 63-25-2	Carbaryl
175	28. 75-15-0	Carbon disulfide
176	23. 463-58-1	Carbonyl sulfide
177	30. 120-80-9	Catechol
178	31. 133-90-4	Chloramben
179	32. 57-74-9	Chlordane
180	33. 8001-35-2	Chlorinated camphene [Toxaphene]
181	34. 79-11-8	Chloroacetic acid
182	35. 532-27-4	2-Chloroacetophenone
183	36. 108-90-7	Chlorobenzene
184	37. 510-15-6	Chlorobenzilate
185	38. 106-89-8	1-Chloro-2,3-epoxypropane [Epichlorohydrin]
186	39. 75-00-3	Chloroethane [Ethyl chloride]
187	40. 74-87-3	Chloromethane [Methyl chloride]
188	41. 107-30-2	Chloromethyl methyl ether [CMME]
189	42. 1319-77-3	Cresol/Cresylic acid (mixed isomers)
190	** 95-48-7	o-Cresol
191	** 108-39-4	m-Cresol
192	** 106-44-5	p-Cresol
193	43. 98-82-8	Cumene [Isopropylbenzene]
194	44. 72-55-9	DDE [1,1-Dichloro-2,2-bis (p-chlorophenyl)
195		ethylene]
196	45. 334-88-3	Diazomethane

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197	46.	132-64-9	Dibenzofuran
198	Category 4 Toxic Air Contaminants (Con't)			
199		CAS No.		Compound
200	47.	96-12-8	.....	1,2-Dibromo-3-chloropropane
201	48.	84-74-2	.....	Dibutylphthalate
202	49.	91-94-1	.....	3,3'-Dichlorobenzidine
203	*	72-55-9	.....	1,1-Dichloro-2,2-bis (p-chlorophenyl) ethylene [DDE]
204	50.	75-34-3	.....	1,1-Dichloroethane [Ethylidene dichloride]
205	51.	75-35-4	.....	1,1-Dichloroethylene [Vinylidene chloride]
206	*	111-44-4	.....	Dichloroethyl ether [Bis (2-chloroethyl) ether]
207	52.	94-75-7	.....	2,4-Dichlorophenoxyacetic acid [2,4-D]
208	& various		including salts and esters	
209	53.	62-73-7	.....	Dichlorvos
210	54.	111-42-2	.....	Diethanolamine
211	55.	123-91-1	.....	1,4-Diethyleneoxide [1,4-Dioxane]
212	56.	64-67-5	.....	Diethyl sulfate
213	57.	119-90-4	.....	3,3'-Dimethoxybenzidine
214	58.	60-11-7	.....	4-Dimethylaminoazobenzene
215	59.	121-69-7	.....	N,N-Dimethylaniline
216	60.	119-93-7	.....	3,3'-Dimethylbenzidine
217	61.	79-44-7	.....	Dimethylcarbamoyl chloride
218	62.	68-12-2	.....	N,N-Dimethylformamide [DMF]
219	63.	57-14-7	.....	1,1-Dimethylhydrazine
220	64.	131-11-3	.....	Dimethyl phthalate
221	65.	77-78-1	.....	Dimethyl sulfate
222	66.	534-52-1	.....	4,6-Dinitro-o-cresol
223	& various		including salts	
224	67.	51-28-5	.....	2,4-Dinitrophenol
225	68.	121-14-2	.....	2,4-Dinitrotoluene
226	*	123-91-1	.....	1,4-Dioxane [1,4-Diethyleneoxide]
227	69.	122-66-7	.....	1,2-Diphenylhydrazine
228	*	106-89-8	.....	Epichlorohydrin [1-Chloro-2,3-epoxypropane]
229	70.	106-88-7	.....	1,2-Epoxybutane
230	71.	100-41-4	.....	Ethylbenzene
231	72.	51-79-6	.....	Ethyl carbamate [Urethane]
232	*	75-00-3	.....	Ethyl chloride [Chloroethane]
233	73.	107-21-1	.....	Ethylene glycol
234	*	151-56-4	.....	Ethyleneimine [Aziridine]
235	74.	96-45-7	.....	Ethylene thiourea
236	*	75-34-3	.....	Ethylidene dichloride [1,1-Dichloroethane]
237	75.	76-44-8	.....	Heptachlor
238	76.	87-68-3	Hexachlorobutadiene
239	77.	58-89-9	1,2,3,4,5,6-Hexachlorocyclohexane

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240	& various	All stereo isomers, including Lindane
241	Category 4 Toxic Air Contaminants (Con't)	
242	CAS No.	Compound
243	78. 77-47-4	Hexachlorocyclopentadiene
244	79. 67-72-1	Hexachloroethane
245	80. 822-06-0	Hexamethylene-1,6-diisocyanate
246	81. 680-31-9	Hexamethylphosphoramide
247	82. 110-54-3	Hexane
248	83. 108-10-1	Hexone [Methyl isobutyl ketone]
249	84. 123-31-9	Hydroquinone
250	85. 74-88-4	Iodomethane [Methyl iodide]
251	86. 78-59-1	Isophorone
252	* 98-82-8	Isopropylbenzene [Cumene]
253	* 58-89-9	Lindane and all stereo isomers
254	& various	see 1,2,3,4,5,6-Hexachlorocyclohexane
255	87. 108-31-6	Maleic anhydride
256	88. 67-56-1	Methanol
257	89. 72-43-5	Methoxychlor
258	90. 75-55-8	2-Methylaziridine [1,2-Propylenimine]
259	* 74-83-9	Methyl bromide [Bromomethane]
260	* 74-87-3	Methyl chloride [Chloromethane]
261	91. 71-55-6	Methyl chloroform [1,1,1-Trichloroethane]
262	* 78-93-3	Methyl ethyl ketone [MEK] [2-Butanone]
263	92. 60-34-4	Methylhydrazine
264	* 74-88-4	Methyl iodide [Iodomethane]
265	* 108-10-1	Methyl isobutyl ketone [Hexone]
266	93. 624-83-9	Methyl isocyanate
267	94. 80-62-6	Methyl methacrylate [MMA]
268	95. 1634-04-4	Methyl tert-butyl ether [MTBE]
269	96. 101-14-4	4,4'-Methylene bis (2-chloroaniline)
270	97. 101-77-9	4,4'-Methylenedianiline
271	98. 98-95-3	Nitrobenzene
272	99. 92-93-3	4-Nitrobiphenyl
273	100. 100-02-7	4-Nitrophenol
274	101. 79-46-9	2-Nitropropane
275	102. 684-93-5	N-Nitroso-N-methylurea
276	103. 62-75-9	N-Nitrosodimethylamine
277	104. 59-89-2	N-Nitrosomorpholine
278	105. 56-38-2	Parathion
279	106. 82-68-8	Pentachloronitrobenzene [Quintobenzene]
280	107. 87-86-5	Pentachlorophenol
281	108. 108-95-2	Phenol
282	109. 106-50-3	p-Phenylenediamine

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283	110.	75-44-5	Phosgene
284	Category 4 Toxic Air Contaminants (Con't)			
285		CAS No.		Compound
286	111.	7803-51-2	.....	Phosphine
287	112.	7723-14-0	.....	Phosphorus
288		& various		and phosphorus compounds
289	113.	85-44-9	.....	Phthalic anhydride
290	114.	1120-71-4	.....	1,3-Propane sultone
291	115.	57-57-8	.....	beta-Propiolactone
292	116.	123-38-6	.....	Propionaldehyde
293	*	114-26-1	.....	Propoxur [Baygon]
294	117.	75-56-9	.....	Propylene oxide
295	*	75-55-8	.....	1,2-Propylenimine [2-Methylaziridine]
296	*	106-51-4	.....	Quinone [p-Benzoquinone]
297	*	82-68-8	.....	Quintobenzene [Pentachloronitrobenzene]
298	118.	100-42-5	.....	Styrene
299	119.	96-09-3	.....	Styrene oxide
300	120.	1746-01-6	.....	2,3,7,8-Tetrachlorodibenzo-p-dioxin
301	121.	7550-45-0	.....	Titanium tetrachloride
302	122.	95-80-7	.....	Toluene-2,4-diamine
303	123.	584-84-9	.....	2,4-Toluene diisocyanate [TDI]
304	124.	95-53-4	.....	o-Toluidine
305	*	8001-35-2	.....	Toxaphene [Chlorinated camphene]
306	125.	120-82-1	.....	1,2,4-Trichlorobenzene
307	*	71-55-6	.....	1,1,1-Trichloroethane [Methyl chloroform]
308	126.	79-00-5	.....	1,1,2-Trichloroethane
309	127.	95-95-4	.....	2,4,5-Trichlorophenol
310	128.	88-06-2	.....	2,4,6-Trichlorophenol
311	129.	121-44-8	.....	Triethylamine
312	130.	1582-09-8	.....	Trifluralin
313	131.	540-84-1	.....	2,2,4-Trimethylpentane
314	*	51-79-6	.....	Urethane [Ethyl carbamate)]
315	132.	108-05-4	.....	Vinyl acetate
316	133.	593-60-2	.....	Vinyl bromide
317	*	75-35-4	.....	Vinylidene chloride [1,1-Dichloroethylene]
318	134.	57-12-5	.....	Cyanide
319		& various		and cyanide compounds ¹
320	135.	N/A	.....	Fine mineral fibers ²
321	136.	10043-92-2	.....	Radon
322		& various		and other radionuclides ³
323	137.	7782-49-2	Selenium
324		& various		and selenium compounds

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Category 4 Toxic Air Contaminants (Con't)

Category 4 Toxic Air Contaminants notes:

* This compound is also listed under a different name and the other listing has a listing number.

** The specific isomer is included in the "mixed isomers" listing.

For all listings above that contain the word "compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, cyanide, phosphorus, and selenium) as part of that chemical's infrastructure.

¹ X'CN where X = H' or any other group where a formal dissociation may occur. For example, KCN or Ca(CN)₂

² Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

³ A type of atom which spontaneously undergoes radioactive decay.

SECTION 5 Exemptions from the Definition of Toxic Air Contaminant

As used in these regulations, the following substances shall not be considered to be a toxic air contaminant:

5.1 Any substance for which there is a national ambient air quality standard, but only to the extent that a particular substance is treated in a generic fashion, for example, as particulate matter or a volatile organic compound,

5.2 Carbon dioxide,

5.3 Ethane,

5.4 Grain dust,

5.5 Helium,

5.6 Hydrogen,

5.7 Liquified petroleum gas,

5.8 Methane,

5.9 Nitrogen,

5.10 Oxygen,

5.11 Propane, and

5.12 Water vapor.

SECTION 6 Implementation Guidance

6.1 If a TAC is a compound that is included in a listed compound group, for example, a metal compound group, and a benchmark ambient concentration (BAC) is derived for the compound group, then that BAC shall be the default BAC for a compound in that group

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unless a BAC for the specific compound is derived pursuant to the methodology in Regulation 5.20.

6.2 If a TAC is a compound that is included in two listed compound groups, then environmental acceptability shall be demonstrated based upon the more stringent BAC. If the two compound groups applicable to that TAC are listed in different TAC categories, then the requirements of the lower numbered category (Category 2 is a lower numbered category than Category 3) shall apply.

6.3 The owner or operator of a process or process equipment that has the potential to emit chromium or a chromium compound may, using information that is derived using one of the methods in Regulation 1.06 Stationary Source Self Monitoring, Emissions Inventory Development, and Reporting section 3.2, speciate the chromium emissions by oxidation state. If the chromium is not speciated by oxidation state, then the hexavalent oxidation state shall be assumed.

Adopted v1/_____ ; effective _____.